

CLAIMS:

1. A transmission system (10) comprising a transmitter (12) for transmitting an input signal to a receiver (14) via a transmission channel (16), the transmitter (12) comprising a splitter (20) for splitting up the input signal into at least first and second frequency band signals, the transmitter (12) further comprising a first encoder (22) for encoding the first

5 frequency band signal into a first encoded frequency band signal and a second encoder (24) for encoding the second frequency band signal into a second encoded frequency band signal, the transmitter (12) being arranged for transmitting the first and second encoded frequency band signals via the transmission channel (16) to the receiver (14), the receiver (14) comprising a first decoder (26) for decoding the first encoded frequency band signal into a

10 first decoded frequency band signal and a second decoder (28) for decoding the second encoded frequency band signal into a second decoded frequency band signal, the receiver (14) further comprising a combiner (30) for combining the first and second decoded frequency band signals into an output signal, the receiver (14) further comprising reconstruction means (48) for reconstructing the second decoded frequency band signal when the second decoded frequency band signal is not available, characterised in that the 15 reconstruction means (48) are arranged for reconstructing the second decoded frequency band signal from the first decoded frequency band signal.

2. The transmission system (10) according to claim 1, characterised in that the

20 reconstruction means (48) are arranged for reconstructing the second decoded frequency band signal from the first decoded frequency band signal by extending a bandwidth of the first decoded frequency band signal.

3. The transmission system (10) according to claim 1 or 2, characterised in that

25 the reconstruction means (48) are arranged for reconstructing a present frame of the second decoded frequency band signal from a present frame of the first decoded frequency band signal and from a previous frame of the second decoded frequency band signal.

4. The transmission system (10) according to any one of claims 1 to 3, characterised in that the first frequency band signal and the first encoded frequency band signal and the first decoded frequency band signal are signals having a low frequency band and in that the second frequency band signal and the second encoded frequency band signal and the second decoded frequency band signal are signals having a high frequency band.

5. A receiver (14) for receiving, via a transmission channel (16), first and second encoded frequency band signals from a transmitter (12), the receiver (14) comprising a first decoder (26) for decoding the first encoded frequency band signal into a first decoded frequency band signal and a second decoder (28) for decoding the second encoded frequency band signal into a second decoded frequency band signal, the receiver (14) further comprising a combiner (30) for combining the first and second decoded frequency band signals into an output signal, the receiver (14) further comprising reconstruction means (48) for reconstructing the second decoded frequency band signal when the second decoded frequency band signal is not available, characterised in that the reconstruction means (48) are arranged for reconstructing the second decoded frequency band signal from the first decoded frequency band signal.

6. The receiver (14) according to claim 5, characterised in that the reconstruction means (48) are arranged for reconstructing the second decoded frequency band signal from the first decoded frequency band signal by extending a bandwidth of the first decoded frequency band signal.

7. The receiver (14) according to claim 5 or 6, characterised in that the reconstruction means (48) are arranged for reconstructing a present frame of the second decoded frequency band signal from a present frame of the first decoded frequency band signal and from a previous frame of the second decoded frequency band signal.

8. The receiver (14) according to any one of claims 5 to 7, characterised in that the first encoded frequency band signal and the first decoded frequency band signal are signals having a low frequency band and in that the second encoded frequency band signal and the second decoded frequency band signal are signals having a high frequency band.

9. A method of transmitting an input signal via a transmission channel (16), the method comprising:

- splitting up the input signal into at least first and second frequency band signals,
- encoding the first frequency band signal into a first encoded frequency band signal and encoding the second frequency band signal into a second encoded frequency band signal,
- transmitting the first and second encoded frequency band signals via the transmission channel (16),
- decoding the first encoded frequency band signal into a first decoded frequency band signal and decoding the second encoded frequency band signal into a second decoded frequency band signal,
- combining the first and second decoded frequency band signals into an output signal,
- reconstructing the second decoded frequency band signal when the second decoded frequency band signal is not available, characterised in that the second decoded frequency band signal is reconstructed from the first decoded frequency band signal.

10. The method of transmitting an input signal via a transmission channel (16) according to claim 9, characterised in that the second decoded frequency band signal is reconstructed from the first decoded frequency band signal by extending a bandwidth of the first decoded frequency band signal.

11. The method of transmitting an input signal via a transmission channel (16) according to claim 9 or 10, characterised in that a present frame of the second decoded frequency band signal is reconstructed from a present frame of the first decoded frequency band signal and from a previous frame of the second decoded frequency band signal.

12. The method of transmitting an input signal via a transmission channel (16) according to any one of claims 9 to 11, characterised in that the first frequency band signal and the first encoded frequency band signal and the first decoded frequency band signal are signals having a low frequency band and in that the second frequency band signal and the second encoded frequency band signal and the second decoded frequency band signal are signals having a high frequency band.

13. A method of receiving, via a transmission channel (16), first and second encoded frequency band signals, the method comprising:

- decoding the first encoded frequency band signal into a first decoded frequency band signal and decoding the second encoded frequency band signal into a second decoded frequency band signal,
- combining the first and second decoded frequency band signals into an output signal,

5 • reconstructing the second decoded frequency band signal when the second decoded frequency band signal is not available, characterised in that the second decoded frequency band signal is reconstructed from the first decoded frequency band signal.

14. The method of receiving, via a transmission channel (16), first and second
10 encoded frequency band signals according to claim 13, characterised in that the second
decoded frequency band signal is reconstructed from the first decoded frequency band signal
by extending a bandwidth of the first decoded frequency band signal.

15. The method of receiving, via a transmission channel (16), first and second
encoded frequency band signals according to claim 13 or 14, characterised in that a present
frame of the second decoded frequency band signal is reconstructed from a present frame of
the first decoded frequency band signal and from a previous frame of the second decoded
frequency band signal.

20. The method of receiving, via a transmission channel (16), first and second
encoded frequency band signals according to any one of claims 13 to 15, characterised in that
the first encoded frequency band signal and the first decoded frequency band signal are
signals having a low frequency band and in that the second encoded frequency band signal
and the second decoded frequency band signal are signals having a high frequency band.

25. A speech decoder (60) for decoding first and second encoded frequency band
speech signals, the speech decoder (60) comprising a first decoder (26) for decoding the first
encoded frequency band speech signal into a first decoded frequency band speech signal and
a second decoder (28) for decoding the second encoded frequency band speech signal into a
30 second decoded frequency band speech signal, the speech decoder (60) further comprising a
combiner (30) for combining the first and second decoded frequency band speech signals into
an output signal, the speech decoder (60) further comprising reconstruction means (48) for
reconstructing the second decoded frequency band speech signal when the second decoded
frequency band signal is not available, characterised in that reconstruction means (48) are

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arranged for reconstructing the second decoded frequency band speech signal from the first decoded frequency band speech signal.

18. The speech decoder (60) according to claim 17, characterised in that the reconstruction means (48) are arranged for reconstructing the second decoded frequency band speech signal from the first decoded frequency band speech signal by extending a bandwidth of the first decoded frequency band speech signal.

19. The speech decoder (60) according to claim 17 or 18, characterised in that the reconstruction means (48) are arranged for reconstructing a present frame of the second decoded frequency band speech signal from a present frame of the first decoded frequency band speech signal and from a previous frame of the second decoded frequency band speech signal.

20. The speech decoder (60) according to any one of claims 17 to 19, characterised in that the first encoded frequency band speech signal and the first decoded frequency band speech signal are signals having a low frequency band and in that the second encoded frequency band speech signal and the second decoded frequency band speech signal are signals having a high frequency band.